



Picture of the Week: Bismuth and tin on the rocks

February 15, 2016

Bismuth and tin on the rocks

Scientists at Los Alamos National Laboratory are using state-of-the-art experimental techniques to see and understand how microstructures evolve during materials processing. The microscopic structure of a material dictates its properties and performance. This false color x-ray movie demonstrates the use of high-energy x-rays in the laboratory to watch the growth dynamics of blocky bismuth crystals in a bismuth-tin alloy melt during controlled directional solidification. The benefit of this technique is the large field of view it provides.

READ MORE

The results from experiments like the one in the video above are used to inform, develop, and validate computational models of solidification dynamics at different length and time scales. The goal is to use experimental and modeling tools for the prediction and control of metal alloy microstructures and properties by design, demonstrating how proposed Matter-Radiation Interactions in Extremes (MaRIE) capabilities will further enable the advanced manufacturing of materials. You can read more about the exciting work of scientists in Los Alamos' Materials Technology – Metallurgy, Engineered Materials, and Nondestructive Testing & Evaluation groups in '[Materials at the Mesoscale](#)' from the January, 2015 issue of [1663 Magazine](#).

Los Alamos National Laboratory

www.lanl.gov

(505) 667-7000

Los Alamos, NM

Operated by Los Alamos National Security, LLC for the Department of Energy's NNSA

